

ms specified in presentations in
bold

items from questions / discussion in
italic

What we have learned

- It takes people. RS
- It takes time. RS
- It takes patience. RS
- RF: No change in understanding of alluvial vs bedrock control... bedrock was known during TRFES
- RF: Speed of change is not what expected (is slower).
- RF: Temperature has not changed in biologically meaningful way.
- RF: pool studies show not significant hole filling. (Mr. Wellock gives examples where they are filling; Gauman study shows not overall).
- DB: Complexity and diversity of design features are important
- DB: Engaging and involving stakeholders early in the process is key
- DB: Large wood introductions are important for physical process and habitat creation / cover
- DB: Balancing stream power with floodplain shallow water habitats.
- AM: validation of habitat categories. About 75 % of juveniles will be within cover

areas.

Wood is good!

- AM: 300-2000 cfs habitats are most critical for juveniles. Flow study showed habitat declines from 300 to 2000.
- AM: Hocker has lowest habitat of all rehab sites mapped. Lowden, Sawmill, Sven are among best... complexity.
- AM: Dark gulch habitat skyrocketed after 11k flow... major bar formation now forces 2000 cfs out over floodplain. Vegetation coming back for cover (both reveg and natural)
- AM: More edge = more habitat
- AM:
- AM: Wood is good
- Beechie & Pess:
- Lower parts of 40 miles get tributary flows that push them into the habitat dip more often than upper part of 40.
- CC: Total production needed from trinity basin yet to be defined (a single thread low-flow channel is unlikely to be "sufficient")
- CC: Summer baseflow habitat is a weak metric for program success (a multiple thread low-flow channel is also unlikely to be

"sufficient"

- CC: Habitats that are engaged at intermediate flows are critical for improving mainstem salmon production
- AK: TRFES itself recognized berms were not everywhere. Perceived reduction in berm removal is incorrect.
- AK: larger more complex projects implemented to speed up channel evolution... habitat... fish... Adaptive Management.
- AK: River is much less alluvial than originally envisioned (and more terraces).
- AK: River terraces may require extensive cutting
- AK: Large-scale channel features may be needed to interact with flood flows and drive more rapid changes
- AK: The desired response time greatly influences the type and size of management actions.
- DG: feathered edges and early TRRP (Hocker) did not do much for channel dynamics.
- Complex channel morphology is associated with forcing elements, such as bedrock outcrops and valley curvature (also deltas, wood).

Add forcing elements to designs

Wood strengthens elements for several flows, but not permanent

- **Forcing elements that concentrate flow stimulate a geomorphic response.**
- **DB: large amount of scientific literature on advantages of wood for habitat, hydraulics, etc.**
- **WS: Historic photos show large wood and forests along Trinity.**
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little wood.

- **Group: TRFES indicated food production not an issue (indirect from size of fish making it to screw traps)... but do we need more attention on food production? Some assumption also that the habitat we build toward fish will also increase food production.**
- **WS: Initial look at wood quantities by Entrix suggested targets for addition of wood – even our recent rehab sites are only about 0.5-0.75 of targets.**

- **ED: Why don't we use more AM in rehabilitation?**
- **Of the 62k fall run chinook and other basin fish goals, how much do we need to come from the upper 40 miles of mainstem?**
- **Group: Impact of brown trout? (including night behaviors)**
- **RF: Some productive chinook rivers have little wood... is wood fundamentally needed or is it 'ranch dressing' attractant?**
- **WS: Quantification of wood needs is still in early stages... wood budget in process.**

What we think we learned or what we our assumptions

- **Some of our 'learning' has happened outside of fully structured AEAM.**
- **Side Channels provide refuge for juveniles against predation from brown trout and larger hatchery steelhead...(?)**
- **SL: Sum of actions into actual increase of fish numbers will take a very long time (20 years?)... thus use of habitat as interim check on improvements.**
- **DH: Trinity likely had large amounts of wood historically... probably more than some rivers mentioned of high production rivers with**

Remaining Uncertainties

- **Can a more dynamic and complex channel support restoration? RF**
- **Are flows sufficient to prevent encroachment – especially during drought? RF**
- **How to add gravel and wood? RF**
- **Can we mitigate climate change (warming)? RF**
- **RS: How well will bars mobilize in higher restoration flows?**
- **Group: how will bars evolve with vegetation coming on versus flows remobilizing? (e.g. Dark Gulch)**